Commonwealth of Kentucky
Division for Air Quality

PERMIT APPLICATION SUMMARY FORM

Completed by: Kenvirons, Inc.
Reviewed by Ralph E. Gosney, DAQ

GENERAL INFORMATION:

Name:	Aristech Acrylics LLC
Address:	7350 Empire Drive, Florence, KY 41042
Date application received:	July 29, 2005
SIC/Source description:	3081/ Unsupported Plastic Film and Sheets
Source I.D. #:	021-015-00004
Source A.I. #:	141
Activity #:	APE200050003
Permit number:	V-05-090

APPLICATION TYPE/PERMIT ACTIVITY:

[ ] Initial issuance
[ ] Permit modification
__Administrative
__Minor
__Significant
[X] Permit renewal
[ ] General permit
[ ] Conditional major
[X] Title V
[ ] Synthetic minor
[X] Operating
[ ] Construction/operating

COMPLIANCE SUMMARY:

[ ] Source is out of compliance
[ ] Compliance schedule included
[X] Compliance certification signed

APPLICABLE REQUIREMENTS LIST:

[ ] NSR
[ ] PSD
[ ] Netted out of PSD/NSR
[ ] NSPS
[X] NESHAPS
[ ]
[X] SIP
[ ] Other

MISCELLANEOUS:

[ ] Acid rain source
[ ] Source subject to 112(r)
[X] Source applied for federally enforceable emissions cap
[ ] Source provided terms for alternative operating scenarios
[X] Source subject to a MACT standard
[ ] Source requested case-by-case 112(g) or (j) determination
[ ] Application proposes new control technology
[X] Certified by responsible official
[X] Diagrams or drawings included
[ ] Confidential business information (CBI) submitted in application
[ ] Pollution Prevention Measures
[X] Area is non-attainment (list pollutants): Ozone 8-hr standard (VOC and NOx) and Particulate Matter less than 2.5 microns (PM2.5)

EMISSIONS SUMMARY:

Pollutant	Actual Emissions (tpy)	[(1)]Title V Potential (tpy)
CO	10.05	13.7
NO_x	12.06	151
PM	1.27	41.0
PM_{10}	1.57	41.0
SO_2	0.23	431
VOC	9.96	113
HAP's	3.23	105.8
Methyl methacrylate	2.78	104

(1) The Title V PTE emissions are based on the combustion of #6 fuel oil from Boilers #1 - 3 EP's 02 – 04.

SOURCE PROCESS DESCRIPTION:

Aristech Acrylics LLC in Florence, Kentucky, manufactures acrylic sheets by polymerization of methyl methacyrlate (MMA) monomer. Prior to the polymerization step, pigments and other additives are mixed with the MMA to produce different colors and product grades. MMA syrup is produced by partial polymerization of MMA in any of 20 reactors; EP 05(06) consists of eighteen – 500-gallon vessels and EP 48(46) consists of two – 1285-gallon vessels. Theses reactors are blanketed with nitrogen at 1-2" w.g. The syrup is sent to one of two blend tanks EP 05(07) and EP 50(50) for homogenization, to the promoters or suspension mix tanks. The 17 promoters are kept under vacuum to remove gases in the syrup before final polymerization.

The vacuum system is vented to the facility's three 31.4 mmBtu/hr natural gas boilers (#2 and #6 fuel oil is used as back-up fuel). The blowdown from the vacuum pump is sent to the publicly owned treatment works.

Aristech is considered a major source due to potential emissions of a hazardous air pollutant (methyl methacyrlate) greater than ten (10) tons per year.

Several changes to emission point identifications have been incorporated in the renewal due to the facility becoming subject to 40 CFR 63 Subpart FFFF. Some existing process equipment were divided appropriately into equipment regulated and not regulated under Subpart FFFF. Equipment leak emission points were appropriately combined into F-1, F-2, and F-3. F-2 is subject to Subpart FFFF.

Several processes were discontinued or removed from the facility; therefore the associated emission points were deleted from the permit.

Aristech Acrylics has become subject to two NESHAP regulations since the initial permit was issued, 40 CFR 63 Subpart FFFF and Subpart DDDDD. The facility has submitted Initial Notifications for both regulations as required. The notification is the only compliance activity required under Subpart DDDDD for existing large (>10 mmBtu/hr) gaseous fuel boilers. The facility is subject to a compliance date pursuant to Subpart FFFF of May 10, 2008.

EMISSION AND OPERATING CAPS DESCRIPTION:

MMA Monomer Reclaim System:
Emissions from the process were calculated using engineering estimates and EPA equipment leak emission factors. It was assumed that the process runs continuously, 8,760 hours per year. The emissions are controlled by venting the slipstream to the boilers having a minimum of 96% destruction efficiency. The flow rate of MMA stream venting to the boilers must be monitored at all times the system is operational to not exceed 2.5% of the purge stream from the vacuum receiver in any 12-month rolling period.

To preclude the applicability of case by case MACT, the source proposed to take voluntary emission limits of 0.96 tons per year from the purge stream by limiting methyl methacrylate in the purge stream to 2.5%. MMA emissions as fugitive from equipment leaks shall not exceed 8.03 tons per year. These limits were revised since permit V-00-035 (Revision 1) was issued due to minor changes in design parameters, final design and testing of the equipment. The affected facility shall remain under 9 tons per year regardless of the revised distribution of emissions.

OPERATIONAL FLEXIBILITY:

N/A